

SECTION 07200

INSULATION

LANL MASTER CONSTRUCTION SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the ESM Architectural POC.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Specification developed for ML-3 / ML-4 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

This specification meets EPA CPG Green Requirements

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. All insulation in the Work, except that specified in Sections 07531, Elastomeric Membrane Roofing (Hypalon) and 09260, Gypsum Board Assemblies.
 - 1. Furnishing and installation of batt insulation and vapor barrier for exterior wall construction.
 - 2. Batt insulation for filling perimeter window and door shim spaces.
 - 3. Building board insulation for foundation perimeter and under concrete slabs.
 - 4. Building board insulation for furred exterior masonry walls.

1.2 RELATED SECTIONS

- A. Section 07270, Firestopping.

1.3 REFERENCES

- A. Codes and Standards: Comply with the following codes and standards including current editions, revisions and supplements.
- B. ASTM C578-92, Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- C. ASTM C726-93, Specification for Mineral Fiber Roof Insulation Board.

- D. ASTM C665, Insulation Blankets, Thermal (Mineral Fiber for Ambient Temperatures).
- E. ASTM C578, Insulation Board, Thermal (Polystyrene).
- F. ASTM C612, Insulation, Blankets, Thermal (Mineral Fiber, Industrial Type).
- G. EPA (Environmental Protection Agency) CPA (Comprehensive Procurement Guideline), (<http://www.epa.gov/cpg>)

1.4 SUBMITTALS

- A. Submit the following in accordance with Section 01330, Submittal Procedures:
 - 1. Submit product data for [approval], [information] including manufacturer's specifications and installation instructions.
 - 2. Certification that percentage of recovered materials will be at least equal to amount specified in Part 2 for applicable material.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store insulation and materials in dry areas where possible and in manufacturer's original containers or bundles. Protect from becoming wet when not stored in dry areas.
- B. Protect vapor barrier or insulation from damage.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Comply with Section 01630, Product Options and Substitutions.

2.2 MATERIALS

- A. Provide batt insulation conforming to ASTM C665, Type III, Class A; preformed glass fiber batt or roll; with foil reinforced kraft covering one side for wall and roofs, with the following properties:

Flame spread	25 or less in accordance with ASTM E84
Smoke development	50 or less in accordance with ASTM E84

Thermal resistance	[3 1/2 inch thick = R11] [6 1/4 inch thick = R29] [9 1/2 inch thick = R30] in accordance with ASTM C518
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Recovered material	Minimum recovered (recycled) material content 20-25 percent in accordance with EPA's CPG.
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- B. Provide polystyrene board insulation conforming to ASTM C578, Type IV; extruded cellular type, with the following properties:

Thermal resistance	Minimum R value of 5.0 per inch of thickness, at 75 degrees F mean temperature.
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Thickness	As indicated on the Drawings
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Compressive strength	Minimum 25 psi
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Water absorption	In accordance with ASTM C272, maximum 0.3 percent by volume.
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- C. Provide glass fiber insulation conforming to ASTM C665, Type III, Class A; foil faced semirigid type, with the following properties.

Flame spread	25 or less in accordance with ASTM E84
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Thermal resistance	Minimum R value of 6.5 for 1 1/2 inches
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Recovered material	Minimum recovered (recycled) material content 20-25 percent in accordance with EPA's CPG.
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- D. Sheet Barrier: Black polyethylene film for above grade application, 6 mil thick.

- E. Staples: Steel wire; galvanized; type and size to suit application.

- F. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inches wide.

- G. Wire Mesh: Galvanized steel, hexagonal wire mesh.

- H. Adhesive: Type recommended by insulation manufacturer.

2.3 MANUFACTURERS

- A. Board insulation

1. Dow Chemical U.S.A.
2. Johns Manville.
3. Owen Corning

- B. Batt insulation
 - 1. Certain Teed Corp.
 - 2. Knauf Fiber Glass GmbH
 - 3. Owens-Corning Fiberglas Corp.

PART 3 EXECUTION

3.1 INSPECTION

- A. Board insulation
 - 1. Verify that substrate, adjacent materials and insulation boards are clean, dry and ready to receive adhesive and installation.
 - 2. Verify that substrate surface is flat, free of honeycomb, fins, irregularities and substance that may impede adhesive bond.
- B. Batt insulation
 - 1. Verify that adjacent materials are dry and ready to receive installation of insulation.
 - 2. Verify mechanical and electrical services within walls have been installed and tested.

3.2 PROTECTION

- A. Prevent insulation from becoming wet prior to covering.
- B. Prevent insulation from being displaced or damaged while placing vapor barrier and slab.
- C. Apply insulation protective covering to prevent damage by gravel and backfill at walls.

3.3 INSTALLATION

- A. Install insulation and vapor barrier in accordance with the manufacturer's instructions.
- B. Install where indicated on the drawings, without gaps or voids.
- C. Trim insulation neatly to fit spaces.

- D. Fit insulation tight in spaces and to exterior side of mechanical and electrical services within the plane of insulation.
- E. Wood Framing: Place vapor and air barrier on warm side of insulation. Staple flanges to sides of the studs 6 inches on center.
- F. Metal Framing: Place vapor and air barrier on warm side of insulation.
- G. Secure insulation in place with wire mesh secured to framing members where shown on the drawings for ceiling insulation. Tape tears or cuts in barrier.
- H. Extend vapor and air barrier tight to full perimeter of adjacent window and door frames and other items interrupting the plane of membrane. Tape in place.
- I. Adhere boards to foundation wall perimeter, horizontally. Place boards in a method to maximize contact bedding. Stagger end joints. Butt edges and ends tight to adjacent board and to protrusions.
- J. Place insulation under slabs on grade after base for slab has been compacted.
- K. Stuff loose insulation into miscellaneous voids and cavities. Compact insulation to no less than 75 percent of it normal volume.
- L. Install batts, friction fit, in wall and roof cavities without gaps or voids.

END OF SECTION

Do not delete the following reference information:

FOR LANL USE ONLY

This project specification is based on LANL Master Construction Specification Rev. 1, dated June 30, 2003.